MKT424 Analytics Design & Application

MSMA Group 6



Executive Summary

Email campaign does have effective impacts on driving purchases.

Those customers bought Chardonnay, Sauvignon blanc and Cabernet or whose purchase records are within 45 days should be targeted by the email campaign.

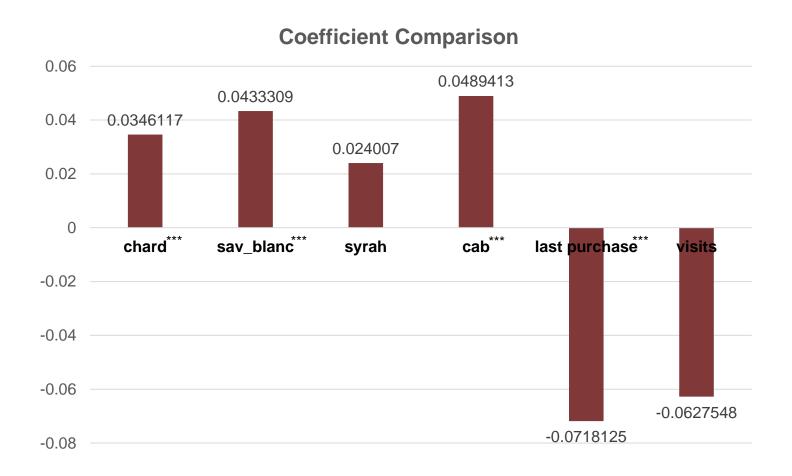
After taking cost and margin into account, the wine retailer can target 43,789 customers, which take up 55.9% of total training sample.



Methodology

Step 3 Step 1 Step 2 Verify the impact of **Explore the target group with** Validate the target group email campaign high response probability from the individual level Evaluate the impact through Use slice and dice based on • Implement causal forest to average causal effect variables with significance in predict the email effect for individuals previous step Assign score to each Add control variables to the • Find out the group with highest individual with cost and conditional causal effect among regression model to get more margin different recencies and brands accurate causal relationship

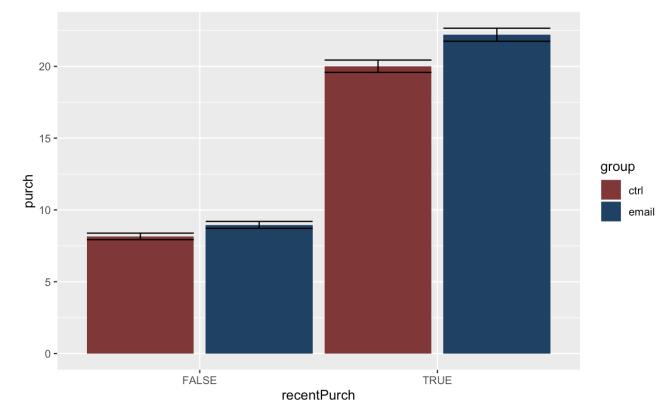
Average Causal Effect



- ✓ Email variable will increase purchase by \$1.35 under average causal effect.
- ✓ After adding baseline variables, Email variable can still increase purchase by \$1.26 under conditional causal effect and variables chard, sav_blanc, cab and last_purchase show importance to influence purchase.

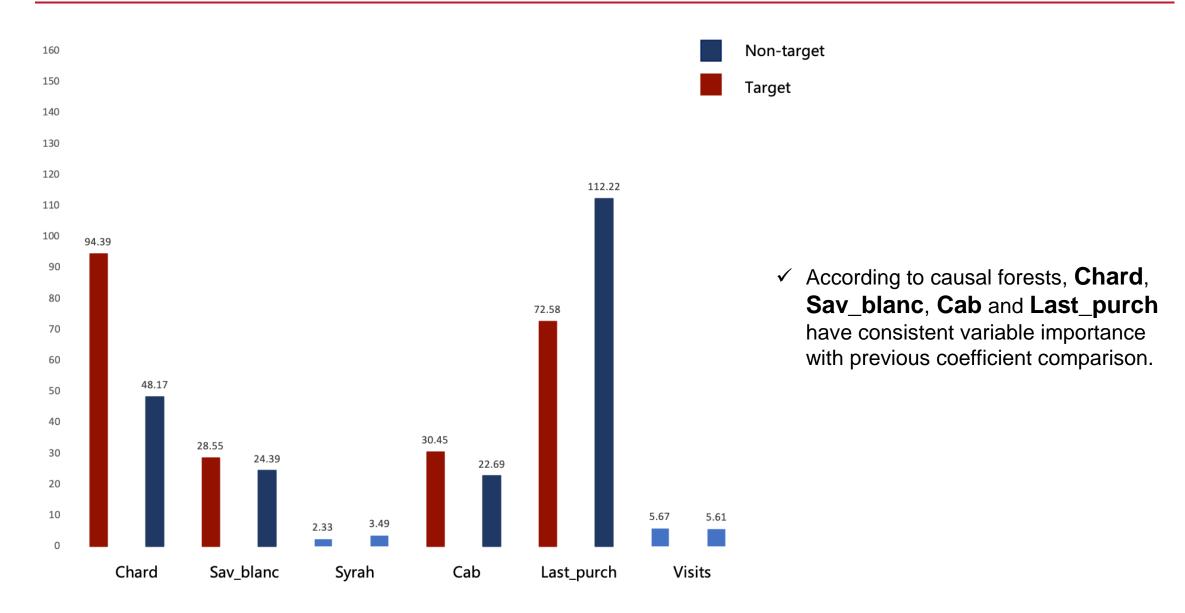
Slice and Dice Example: Recency

Received Email	Recent Purchase False	Recent Purchase True
< 30 days	\$0.99	\$2.19
< 45 days	\$0.8	\$2.19
< 60 days	\$0.90	\$1.73
< 90 days	\$0.60	\$1.79
< 120 days	\$0.18	\$1.74

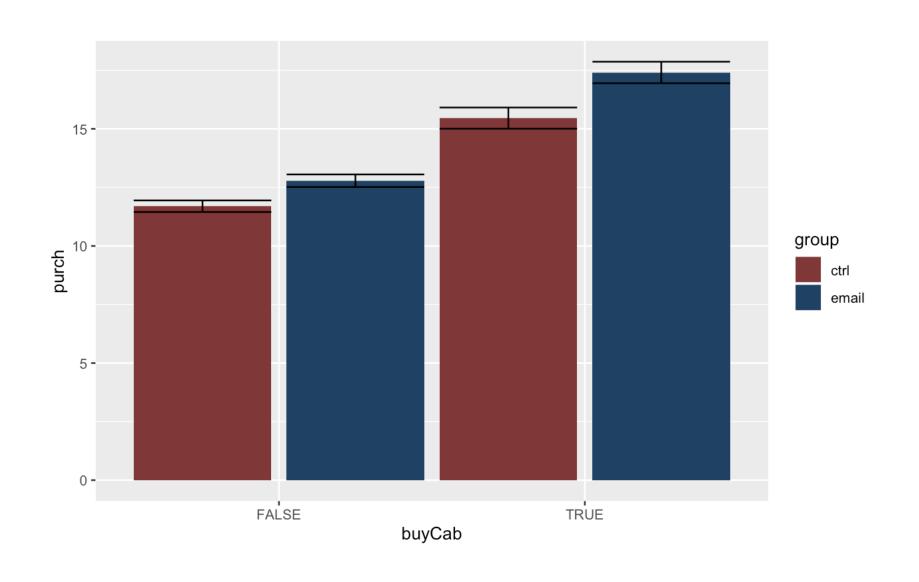


- Based on the trail, **45 days** is the best dividing line of whether consumers purchased recently.
- ✓ Email campaign does have **greater impact** on customers who purchased recently.

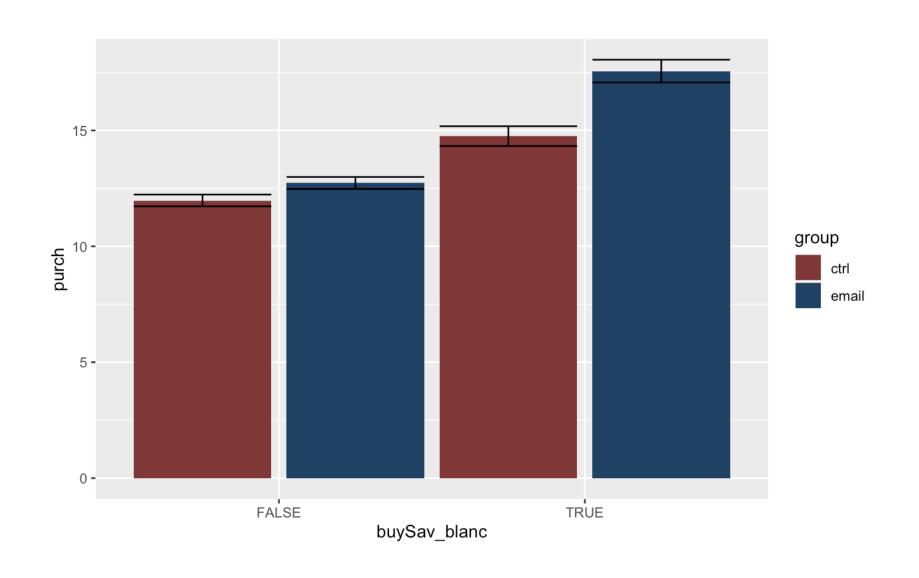
Individual-level Prediction



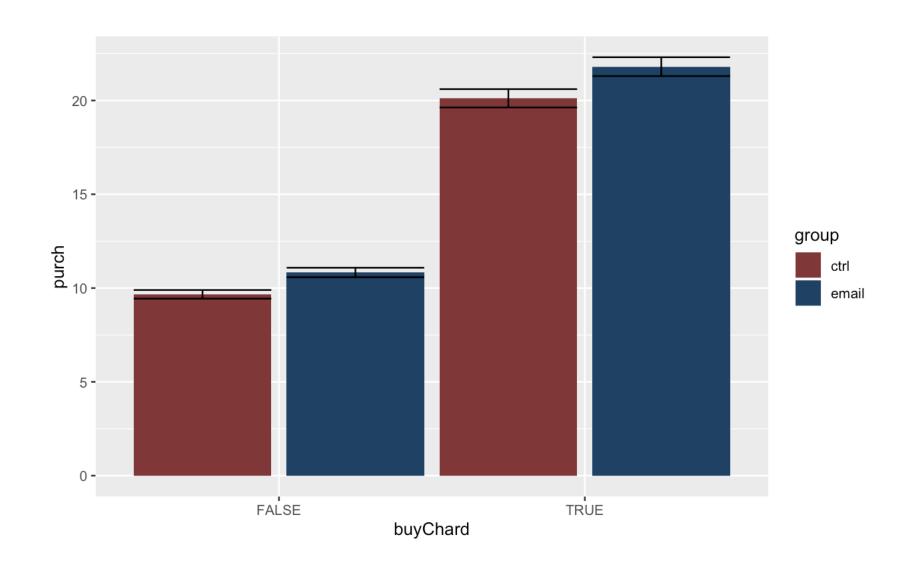
Appendix — Slice and Dice Example: Brand



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Appendix — Cost and Margin

✓ Average cost: \$0.1

✓ Margin: 30%

```
#Calculate the margin and decide whether to send emails
predict_form$margin <- predict_form$predictions * 0.3 - 0.1
predict_form$sent <- predict_form$margin > 0
```

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